



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,570	10/24/2001	Gilbert Cabillic	TIF-32157	5072

23494 7590 09/10/2004

TEXAS INSTRUMENTS INCORPORATED
P O BOX 655474, M/S 3999
DALLAS, TX 75265

EXAMINER

STEELMAN, MARY J

ART UNIT	PAPER NUMBER
----------	--------------

2122

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/003,570

Applicant(s)

CABILLIC

Examiner

Mary J. Steelman

Art Unit

2122

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/24/2001</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-28 are pending.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in European Patent Convention on 11/29/2000 (00403344.5). It is noted, however, that applicant has not filed a certified copy of the priority application as required by 35 U.S.C. 119(b).

Information Disclosure Statement

3. IDS submitted 10/24/2001 has been considered.

Drawings

4. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because FIG. 1 is missing descriptions in the Specification for 107, 108, and 109. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

5. The use of the trademark JAVA has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Art Unit: 2122

The Specification is objected to due to the incorporation of references on pages 28 and 29. Applicant is requested to remove the references. Applicant may place the references on a IDS, Form 1449.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 9, 10, 13-21, 25, and 26 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims are directed to a 'program per se' and as such are non-statutory.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 8, 20, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7.35.01 Trademark or Trade Name as a Limitation in the Claim

Claim 8, 20, and 21 contain the trademark/trade name JAVA. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph.

See Ex parte Simpson, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain

Art Unit: 2122

since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe byte code programming language and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,571,388 B1 to Venkatraman et al., in view of US Patent 6,230,307 B1 to Davis et al.

Per claims 1, 9, 11, 13, 22, 25, ad 26:

-generating program code for translating high level code into instructions for a target processor...

(Venkatraman: Abstract, lines 9-14, "The tools build the custom environment including a set of code for a virtual machine and a set of code for each of a set of pre-loaded classes specified...", col. 3, lines 42-43, "The target device may be an embedded system...")

-determining a program code characteristic corresponding to a target processor;

Art Unit: 2122

(Venkatraman: Col. 3, lines 57-60, "The pre-load analyzer analyzes the application program to determine which classes are needed for it to execute on the target device. The pre-load analyzer bases its analysis on a set of methods which are invoked by the application program.")

-deriving one or more program code modules in accordance with said desired program code characteristic;

(Venkatraman: Col. 2, lines 16-17, "...by customizing the procedures for class loading to the available resources in the target device.")

-generating program code for translating high level code into instructions for said target processor from said one or more program code modules.

(Venkatraman: Col. 2, lines 20-23, "The tools build the custom environment including a set of code for a virtual machine and a set of code for each of a set of pre-loaded classed specified...")

Venkatraman disclosed generating program code for translating high level code into instructions for a target processor, which could be an embedded system. However, Davis provided more details regarding (Abstract, lines 1-9) controlling and executing the hardware objects (processors) via high level software constructs and managing the reconfigurable resources..."

Davis disclosed (col. 4, lines 41-43) a method and system for dynamically relocatable hardware object development and execution. Davis disclosed (col. 5, lines 52-61) a source program, compiler / converter into an object program, calls to library routines, resulting in load module as output, to get the executable code into a computer system and executing the program.

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention to modify Venkatraman's invention to include such disclosures as Davis' for

Art Unit: 2122

reconfigurable resources, which includes virtual processors, because software used to develop processor is known in the art and is useful for developing and debugging code to be applied to resources.

Per claims 2, 10, and 12:

-generating program code for translating high level code into instructions for one of a plurality of target processors.

(Venkatraman: Col. 2, lines 58-61, "The custom software environment is customized in response to the available resources in the target device and the particular functions performed by the application program", col. 3, lines 51-53, "...these techniques are readily adaptable to customize the software environment to multiple application programs in the target device.")

Venkatraman disclosed generating program code for translating high level code into instructions for a target processor, which could be an embedded system. However, Davis provided more details regarding a plurality of target processors (col. 6, lines 40-42), "Either of these embodiments may or may not have an embedded processor or a plurality of embedded processors."

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify Venkatraman's invention to include a plurality of processors, whether virtual as in a virtual machine, or hardware, a detected resource, because either situation is well known in the art. A plurality of processors is useful in handling multi-threaded application process more quickly.

Art Unit: 2122

Per claims 3, 16, and 17:

-forming agglomerated program code from a plurality of program code modules in accordance with said desired program code characteristic.

(Venkatraman: Col. 3, lines 51-53, ““...these techniques are readily adaptable to customize the software environment to multiple application programs in the target device.”)

Per claim 4:

-deriving said program code modules in accordance with a desired functionality for said target processor.

(Venkatraman: Col. 3, lines 26-28, “...specify class libraries from differing sources depending upon the available resources and nature of the target device.”)

Per claim 5:

-determining comprises determining respective program code characteristics for respective ones of a plurality of target processors;

(Venkatraman: Col. 3, lines 57-60, “The pre-load analyzer analyzes the application program to determine which classes are needed for it to execute on the target device. The pre-load analyzer bases its analysis on a set of methods which are invoked by the application program.”)

-deriving comprises deriving respective program code modules in accordance with said respective program code characteristics;

Art Unit: 2122

(Venkatraman: Col. 3, lines 64-66, “The pre-load analyzer takes as input a virtual machine class list. The virtual machine class list specifies a set of native classes which are implemented in the virtual machine.”)

-generating comprises generating program code for translating high level code into instructions for said target processors from said program code modules.

(Venkatraman: Abstract, lines 9-14, “The tools build the custom environment including a set of code for a virtual machine and a set of code for each of a set pre-loaded classes specified in the pre-load class list. The virtual machine loads classes from the pre-loaded classes, a file system class library, and/or a networked class library using widely available network protocols.”)

Per claim 6:

-deriving comprises selecting one or more pre-defined program code modules in accordance with said program code characteristic from a plurality of available program code modules.

(Venkatraman: Col. 3, lines 23-28, “...the custom software environment is customized to a particular application of the target device in that the class loader in the virtual machine enables a developer to specify class libraries from differing sources depending upon the available resources and nature of the target device.”)

Per claims 7, 18, and 19:

-program code provides a virtual machine for said target processor or processors.

Art Unit: 2122

(Venkatraman: Col. 5, lines 39-43, "...application program is a JAVA application and the virtual machine in the custom software environment is a JAVA virtual machine with its native classes implemented in native code for the hardware platform.")

Per claims 8, 20, and 21:

-program code comprises JAVA program elements.

(Venkatraman: Col. 5, lines 39-43, "...JAVA application ...JAVA virtual machine...")

Per claim 14:

Program code comprising at least two program code modules for translating between high level code and instructions for respective ones of at least two target processors.

(Venkatraman: Col. 2, lines 58-65, "The custom software environment is customized in response to the available resources in the target device...assemble together only those classes that are needed to support a desired application ...")

Per claim 15:

-said at least two program code modules being selected from a plurality of predefined program code modules.

(Venkatraman: Col. 2, lines 23-28, "The virtual machine loads classes from the pre-loaded classes, a file system class library, and/or a networked class library...")

Per claim 23:

Art Unit: 2122

A processor, configured by program code comprising an agglomeration of two or more program code modules of said plurality of said program code modules.

(Venkatraman: Col. 3, lines 23-28, "...custom software environment is customized to a particular application of the target device in that the class loader in the virtual machine enables a developer to specify class libraries from differing sources..." Additionally, see rejection of claims 1 and 3 above.)

Per claim 24:

-A system comprising a first and a second processor, said first and second processor configured in accordance with program code comprising at least two program code modules, wherein the first of said at least two program code modules is arranged to translate high level code to instructions for said first processor and a second of said at least two program code modules is arranged to translate high level code to instructions for said second processor.

(Venkatraman: Col. 2, lines 55-61, "The custom environment tools enable the development of a custom software environment which executes on a target device. The custom software environment is customized in response to the available resources in the target device and the particular functions performed by the application program." Additionally, see rejection of claims 13 and 14 above.)

Per claim 27:

-A carrier medium carrying a computer program according to claim 24.

Art Unit: 2122

(It would have been obvious, to one of ordinary skill in the art, at the time of the invention to include the software development system on a carrier medium because software tools, which are software code to accomplish a task, must be stored on some type of memory device. Additionally, see rejection of claims 13 and 14 above.)

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Steelman, whose telephone number is (703) 305-4564. The examiner can normally be reached Monday through Thursday, from 7:00 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on (703) 305-4552. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

After October 25, 2004, examiner can be reached at new telephone number (571) 272-3704. Supervisor, Tuan Q. Dam can be reached at (571) 272-3694.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/003,570

Page 12

Art Unit: 2122

Mary Steelman



09/02/2004



TUAN DAM
SUPERVISORY PATENT EXAMINER